

List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 - 19 (Cancelled)

20. (New) A device for IR-spectrometric analysis of a solid, liquid or gaseous medium, comprising:

a process probe, which has a reflection element;

a linear variable filter,

at least one detector element; and

a control/evaluation unit, wherein:

at least one radiation source is provided, whose electromagnetic radiation is coupled into said reflection element,

at least one waveguide is provided, having an input section and an output section;

the electromagnetic radiation is conducted via the output section of said waveguide into at least one defined area of said linear variable filter;

said detector element and said linear variable filter are arranged movably relative to one another over essentially the length of said linear variable filter; and

said control/evaluation unit determines the spectrum of the medium on the basis of the measured values delivered from said detector element.

21. (New) A device for IR-spectrometric analysis of a solid, liquid or gaseous medium, comprising:

a process probe, which has a reflection element;

a linear variable filter, at least one detector element; and

a control/evaluation unit, wherein:

at least one radiation source is provided, whose electromagnetic radiation is

focused into at least one defined region of said linear variable filter;

at least one waveguide is provided, via which the electromagnetic radiation is coupled, after passing through said linear variable filter, into the reflection element,

the focused electromagnetic radiation coming from said radiation source and said linear variable filter are arranged movably relative to one another over essentially the length of said linear variable filter;

said detector element receives the electromagnetic radiation after it has passed through said reflection element; and

said control/evaluation unit determines the spectrum of the medium on the basis of the measurement values delivered from said detector element.

22. (New) The device as claimed in claim 20, wherein:

said control/evaluation unit controls the relative movement between said detector element and linear variable filter, respectively between said radiation source and said linear variable filter, stepwise or continuously.

23. (New) The device as claimed in claim 20, wherein:

said detector element is mounted fixedly; and

said control/evaluation unit moves said linear variable filter stepwise past said detector element, or, as the case may be,

said radiation source is mounted fixedly; and

said control/evaluation unit moves said linear variable filter stepwise or continuously past said detector element.

24. (New) The device as claimed in claim 20, wherein:

said linear variable filter is mounted fixedly;

said control/evaluation unit moves the detector element stepwise past said linear variable filter, or, as the case may be,

said linear variable filter is fixedly mounted; and

said control/evaluation unit moves said linear variable filter stepwise or

continuously past said radiation source.

25. (New) The device as claimed in claim 20, further comprising:
a holding device, in which said detector element and said output section, respectively said radiation source and the said input section or said linear variable filter are/is mounted.
26. (New) The device as claimed in claim 20, further comprising:
a grid rail, wherein:
said holding device, respectively said detector element, respectively said radiation source or said linear variable filter are arranged on said guide rail.
27. (New) The device as claimed in claim 20, wherein:
said output section and/or said input section includes a cross-section converter.
28. (New) The device as claimed in claim 22, further comprising:
a drive wherein:
said drive is provided for moving said linear variable filter or said detector element, respectively said radiation source, respectively said holding device for said detector element, respectively said radiation source, stepwise or continuously.
29. (New) The device as claimed in claim 20, wherein:
said at least one waveguide is an optical fiber duplexer, via which the measuring radiation and a reference radiation are guided to said reflection element; and
the measuring beam and the reference beam are conducted to said linear variable filter.
30. (New) The device as claimed in claim 20, wherein:
said detector element comprises a pyroelectric detector, preferably a thermopile or an MCT detector, or a detector array.

31. (New) The device as claimed in claim 20, wherein:
said reflection element is manufactured from a high-purity semiconductor material.
32. (New) The device as claimed in claim 20, wherein:
said reflection element is manufactured from a high-purity semiconductor material or another IR-transmittive material, on which a thin diamond coating is applied.
33. (New) The device as claimed in claim 20, wherein:
said reflection element comprises a microprism, which is preferably manufactured from diamond.
34. (New) The device as claimed in claim 20, wherein:
said reflection element is so dimensioned and embodied that the ray path of said measuring light, respectively reference light, undergoes a plurality of reflections in said reflection element; and
the number of reflections is determinable via the length of said reflection element.
35. (New) The device as claimed in claim 33, wherein:
said reflection element has a round, quadratic or polygonal cross sectional area.
36. (New) The device as claimed in claim 35, wherein:
said first wave guide comprises a plurality of fibers and has on the side of said linear variable filter a preferably linear fiber cross-section converter and on the side of said reflection element a preferably L-shaped cross-section converter; and
said second wave guide comprises a plurality of fibers and has on the side of said reflection element a preferably L-shaped fiber cross-section converter and on the side of said detector a preferably quadratic fiber cross-section converter.

37. (New) The device as claimed in claim 36, wherein:

the two fiber cross-section converters are integrated on the side of said reflection element, respectively the microprism, into at least one holder respectively into at least one plug, and are arranged in the immediate vicinity of the cross-sectional area of said reflection element, respectively sit on the cross-sectional area of said reflection element.

38. (New) The device as claimed in claim 20, wherein:

said process probe comprises an ATR probe, a reflection probe or a transmission probe.